



## **GUIDELINES FOR REHABILITATION FOLLOWING SURGICAL**

### **RECONSTRUCTION OF PLC & PCL/ACL (MULTI-LIG KNEE SURGERY)**

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#### **GENERAL GUIDELINES**

- No open chain hamstring work
- Assume 8 weeks for graft to bone healing time
- Caution against posterior tibial translation (gravity, muscle action)
- CPM (as indicated by MD) at 4-6 weeks post-op
- PCL with posterolateral corner or LCL repair follows different post-op care. i.e, Crutches x 6-8 weeks.
- Resistance for Hip PRE's placed above knee for hip abduction, adduction. Resistance may be distal for hip flexion.
- Supervised physical therapy takes place for approximately 3-5 months post-op
- Functional PCL Brace at 4 weeks

#### **GENERAL PROGRESSION OF ACTIVITIES OF DAILY LIVING (ADLS)**

Patient may begin the following activities at the post-op dates listed (unless Otherwise specified by the physician):

- Bathing/Showering without brace (surgical incisions should be healed before immersion in water). – 1 week post-op.
- Sleep without brace – 8 weeks post-op
- Driving – 6-8 weeks post-op
- Full Weightbearing without assistive devices – 8 weeks post-op (with physician clearance).

## **PHYSICAL THERAPY ATTENDANCE**

The following is an approximate schedule for supervised physical therapy visits:

Phase I:	0 to 1 months:	0-1 x Week
Phase II:	1 to 3 months:	2-3 x Week
Phase III:	3 to 9 months:	2 x Month
Phase IV:	9 to 12 months:	1 x Month

## **REHABILITATION PROGRESSION**

The following is a general guideline for progression of the rehabilitation program following PCL or PCL/ACL reconstruction. Progression through each phase should take into consideration patient status (e.g. healing, function) and physician advisement. Please consult the attending physician if there is uncertainty regarding the advancement of a patient to the next phase of rehabilitation.

### **PHASE I**

Begins immediately following surgery and lasts approximately one month.

#### **Goals:**

1. Protect healing bony and soft tissue structures.
2. Minimize the effects of immobilization through:
  - Early protected range of motion (protect against posterior tibial sagging).
  - PRE's for quadriceps, hip and calf with an emphasis on limiting patellofemoral joint compression and posterior tibial translation.
3. Patient education for a clear understanding of limitations and expectations of the rehabilitation process.

#### **Brace:**

Locked at 0 degrees for 4 weeks.

At 4 weeks post-op the brace is unlocked for passive range of motion performed by a physical therapist or athletic trainer. Technique for PT/AT assisted ROM is as follows:

PT/AT Assisted knee flexion ROM: Patient supine –  
**For PCL patients:** maintain anterior pressure on proximal tibia as knee is flexed. For combined PCL/ACL patients, maintain neutral position of proximal tibia as knee is flexed. It is important to prevent posterior tibial sagging at all times.

Patients will be instructed in self administered PROM with the brace on with emphasis on supporting the proximal tibia.

**Weightbearing Status:**

locked.

PWB with crutches for 4-6 weeks, brace is

**Special Considerations:**

Pillow under proximal posterior tibia at rest to prevent posterior sag.

**Ther Ex:**

Instructed in hospital:

- Quad Sets
- SLR
- Hip AB/AD
- Hip Alphabet
- Ankle Pumps

## **Ther. Ex. Cont:**

### **Add at first post-op visit:**

- Hamstring and Calf stretching
- Calf press with Theraband progressing to standing calf raises with full knee extension
- Standing hip extension from neutral
- Continue exercises as above
- \*Note Functional Electrical Stimulation may be used for trace to poor quad contraction

## **Phase II**

Begins approximately 1 months post-op, and extends to the 12th post-op week.

Expectations for advancement to Phase II:

1. Good quad control (Good quad set, no lag with SLR)
2. Approx. 60 degrees of knee flexion
3. Full knee extension
4. No signs of active inflammation

### **Goals:**

1. Increase range of motion (flexion).
2. Restore normal gait.
3. Continue quadriceps strengthening and hamstring flexibility.

**Brace:**

- 4 - 6 weeks: Brace is unlocked for controlled gait training only (patient may ambulate with brace unlocked while attending physical therapy or when at home).
- 6 - 8 weeks: Brace is unlocked for all activities.
- 8 weeks: Discontinue brace as allowed by physician.

**WB Status:**

- 6 - 8 weeks: WBAT with crutches
- No quad lag with SLR
  - Full knee extension
  - Knee flexion 90-100 degrees
  - Normal gait pattern (Pt. may utilize one crutch or cane until normal gait is achieved)

**Ther. Ex:**

4 - 8 weeks:

When patient exhibits independent quad control, may begin open chain extension

- Wall Slides (0 to 45 degrees)  
Begin isometric, progress to active against body weight. Progress to minisquats etc.

**Ther. Ex. Cont.:**

- Eagle 4-way hip flexion, AB, AD, Ext from neutral with knee fully extended.
- Ambulation in pool (Work on restoration of normal heel-toe gait pattern in chest deep water.

**8 - 12 weeks:**

- Stationary Bike: Foot is place forward on the pedal without use of toe clips to minimize hamstring activity. Seat slightly higher than normal.
- Closed kinetic chain terminal knee extension utilizing resisted band or weight machine. Use caution to place point of resistance to minimize tibial displacement.
- Stairmaster
- Balance and Proprioception activites (e.g. single leg stance).
- Leg press. Knee flexion should be limited to 90 degrees during exercise.

### **Phase III:**

Begins approximately three months post-op, and extends to nine months post-op.

Expectations for advancement to Phase III:

1. Full, pain free range of motion. Note that it is not unusual for flexion to be lacking 10-15 degrees for up to 5 months post-op.
2. Normal gait
3. Good to Normal quadriceps strength
4. No patellofemoral complaints
5. Clearance by physician to begin more concentrated closed kinetic chain progression

### **Goals:**

1. Restore any residual loss of motion that may prevent functional progression
2. Progress functionally and prevent patellofemoral irritation
3. Improve functional strength and proprioception utilizing closed kinetic chain exercises
4. Continue to maintain quadriceps strength and hamstring flexibility



**Ther. Ex:**

- Continue closed kinetic chain exercise progression
- Treadmill walking
- Jogging in pool with wet vest or belt
- Swimming - no breaststroke

**Phase IV:**

Begins approximately nine months post-op and extends until the patient has Returned to work or desired activity.

Expectations for advancement to Phase IV:

1. Release by physician to resume full or partial activity.
2. No significant patellofemoral or soft tissue irritation.
3. Presence of the necessary joint range of motion, muscle strength and endurance, and proprioception to safely return to work or athletic participation.

**Goals:**

1. Safe and gradual return to work or athletic participation
  - This may involve sports specific training, work hardening or job restructuring as needed
  - Patient education is essential to provide the patient with a clear understanding of their possible limitations.
2. Maintenance of strength, endurance and function.

**Ther. Ex.:**

- Cross-country ski machine
- Sports specific functional progression which may include but not

be limited to:

- Slide Board
- Jog/Run progression
- Figure 8, Carioca, Backward running, Cutting
- Jumping (plyometrics)
- Work hardening program as directed by physician prescription